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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/288,569 04/09/99 OHTAKI

H DAIN:499

IM22/1105

EXAMINER

ANGEBRANNDT, M

PARKHURST & WENDEL LLP  
1421 PRINCE STREET  
SUITE 210  
ALEXANDRIA VA 22314-2805

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 11/05/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

09/288,569

Applicant(s)

OHTAKI ET AL.

Examiner

Martin J Angebrannt

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 7/20/2001, 8/22/2001 and 9/21/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-13 and 15-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-13 and 15-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1       The response provided by the applicant has been read and given careful consideration. Responses to the arguments offered by the applicant are presented after the first rejection to which they are directed. Rejections made in the prior office action, but not repeated below are withdrawn based upon the amendments to the claims and the arguments offered by the applicant. The examiner appreciates the reference supplied to support the applicant's position and cites it on the PTO-892.

3       The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4       Claims 1-3,5,6,8-10,12,13 and 15-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morii et al. WO/98/12607.

Morii et al. WO/98/12607 teaches the use of various adhesive agents (45/13-22). The disclosure of the impregnation of the adhesive with encapsulated diffusing materials is also disclosed. (pages 48-50). The use of adhesive layers which do not contain plasticizer or the like and acts as a barrier layer is disclosed. (25/22+). The use of tackifying agents and the varying of the amounts is disclosed on page 45 at lines 23-27. The use of rosin esters, terpene resin, phenolic resin and other resins as adhesive layers (5") is disclosed on page 34 at lines 18-24. The disclosure of reaction type acrylic adhesives and UV curing adhesives is disclosed. (45/8-22)

It would have been obvious to use either the terpene resin, phenolic resin or other resins disclosed containing tackifying agents or acrylic based adhesives as the adhesive layers in place

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of those specifically used in the examples based upon equivalent function. The examiner holds that the resins cited inherently contain tackifying agents and that the reference establishes the obviousness of the modification of the content of these adhesives based upon the cited language.

The examiner notes that claims 1-2,8,9 embrace diffusion of the tackifier either into or out of the holographic layer, claims 3 and 10 embrace shifting of the tackifier from the holographic layer into the adhesive layer(s), but not the reverse, claims 12 and 20 embrace diffusion of the tackifier from the holographic layer to the adhesive layer, claims 15 and 21 embrace shifting of the tackifier into the holographic layer and claims 4,11 require a color tuning film between the hologram and one of the adhesive layers. Claims 22-27 use an acrylic or methacrylic monomer as the diffusion agent. The issue of claims 22-27 does not involve tackifier as these are unrecited and monomers are clearly known on the record to result in shifting based upon their size and level of curing and that acrylic adhesive layers are known in the art as useful with holograms. The examiner notes that claims 1-3, 8-10 and those dependent thereon embrace the use of adhesives containing tackifiers at a level which may cause diffusion of any tackifiers/adhesion promoters into the adhesive layer(s).

The examiner notes that in the US Patent corresponding to this reference, (6066378) is of record and is relied upon to establish the contents of the WIPO reference. The issue of tackifiers being contained in the adhesive layers has been addressed within this reference. The examiner notes that only claims 12,20,15 and 21 require diffusion of the tackifier between the layers as the control ling of the reproduction wavelength does not require its shifting from the recording wavelength.

5      Claims 1-6,8-13 and 15-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. '598 and Smothers et al. EP 0407772, in view of Morii et al. WO/98/12607

Ueda et al. '598 teaches in the example with respect to figure 23 a substrate releasable from an adhesive film (101) from figure 22, an adhesive layer (103), a holographic film (2) a second adhesive layer (55), a color tuning film (54), a third adhesive layer (56) and a second substrate (53). The holographic material is omnidex -706 by Dupont, a photopolymeric composition and the adhesives are NOA-61. (13/8-20) Color tuning films are described. (19/41-20/31) The application of the color tuning film directly to the hologram is disclosed with respect to figure 12(b-5).

Smothers et al. EP 0407772 teaches the use of a layered element to transfer monomer, plasticizer or other diffusable materials between a hologram and an adjacent layer containing these. (8/26-50) The swelling or shrinking of the fringes is disclosed. curing of the hologram and the diffusion element may be done at any time to reduce diffusion. (8/15-9/7) The use of various plasticizers and surfactants is disclosed. (6/17-38). The use of adhesion modifiers in photopolymerizable films is disclosed. (6/17-19)

It would have been obvious to one skilled in the art to modify the teachings of Ueda et al. '598 by using the adhesive layers disclosed by Morii et al. WO/98/12607 in place of the adhesive layer of Ueda et al. and to control the replay wavelength of the hologram by careful control of the amount of diffusible components in a manner analogous to that disclosed within Smothers et al. EP 0407772.

The examiner relies upon Smothers and Ueda et al. to establish the species, ie. plasticizers, monomers, etc., which cause the shifting and relies upon the secondary references to establish that tackifiers and resinous adhesives containing them are known in the art and would be present in adhesive compositions.

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6 Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. '598 and Smothers et al. EP 0407772, in view of Morii et al. WO/98/12607, further in view of Yamagishi et al. JP 03-157684, Tarumi et al. '107 or Weber et al. '863.

Yamagishi et al. JP 03-157684 teaches the use of polymerizable adhesives comprising acrylates and/or methacrylates together with a photoinitiator which do not damage the hologram.

Tarumi et al. '107 teaches the use of various adhesives including acrylate and Epoxy adhesives which are UV curable (table 1 and 5/40-6/65)

Weber et al. '863 teaches the use of various adhesives adjacent to holographic recording media including UV curing acrylates. (8/40-62) The use of diffusion elements is also disclosed. (7/6-9)

In addition to the basis provided above, the examiner cites Yamagishi et al. JP 03-157684, Tarumi et al. '107 or Weber et al. '863 to support the position that acrylic/methacrylic curable adhesives are known to be useful with holograms and that the combination set forth above would have been obvious to one skilled in the art.

7 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sato et al. JP 06-004015 teaches the use of various materials as diffusion components, including solvents, plastizers, monomers etc. (see machine translation)

8 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Angebrannt whose telephone number is (703) 308-4397.

I am normally available between 7:30 AM and 5:00 PM, Monday through Thursday and 7:30 AM and 4:00 PM on alternate Fridays.

If repeated attempts to reach me are unsuccessful, my supervisor may be reached at (703) 308-2464.

Facsimile correspondence should be directed to (703) 305-3599.

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'M. J. Angebrannndt', written in a cursive style.

Martin J. Angebrannndt  
Primary Examiner, Group 1750  
November 2, 2001

<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	((swell\$4 or shift\$3 or ((chang\$4 or increas\$4) near3 thick\$6)) with hologra\$6) same (diffus\$6 or difus\$6 or migrat\$4 or infus\$4 or enter or fill\$4)	115	<u>L15</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	waveguide and l13	26	<u>L14</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	kohnke	275	<u>L13</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	l1 same l10	82	<u>L12</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	l1 and l10	303	<u>L11</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	((diffus\$6 or difus\$6 or migrat\$4 or infus\$4 or enter or fill\$4) with hologra\$6)	2400	<u>L10</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	l1 same l8	81	<u>L9</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	((diffus\$4 or migrat\$4 or infus\$4 or enter or fill\$4) with hologra\$6)	2397	<u>L8</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	l1 same l6	155	<u>L7</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	((diffus\$4 or migrat\$4 or mov\$2 or moving or infus\$4 or enter or fill\$4) with hologra\$6)	3839	<u>L6</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	l2 same l3	105	<u>L5</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	l2 and l3	299	<u>L4</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	(volume near3 hologra\$6)	2320	<u>L3</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	((swell\$4 or shift\$3 or ((chang\$4 or increas\$4) near3 thick\$6)) near10 (hologra\$6)	1058	<u>L2</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	((swell\$4 or shift\$3 or ((chang\$4 or increas\$4) near3 thick\$6)) with (hologra\$6)	1280	<u>L1</u>



Set Name Query  
side by sideHit Count  
Set Name  
result set*DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR*

<u>L9</u>	L8 same (adhesive\$1)	17	<u>L9</u>	
<u>L8</u>	L7 near8 (acrylate\$1 or methacrylate\$1)	973	<u>L8</u>	535
<u>L7</u>	(methoxypolyethylene\$1 or methoxydiethylene\$1 or ((methoxy) near4 (polyethylene or (poly near2 ethylene) or diethylene or polyethyleneglycol or ethyleneglycol or diethyleneglycol)))	2916	<u>L7</u>	
<u>L6</u>	L3 same ((acrylic or uv or light or ultraviolet) near5 adhesive\$1)	94	<u>L6</u>	
<u>L5</u>	L3 with (adhesive\$1)	207	<u>L5</u>	
<u>L4</u>	L3 same (adhesive\$1)	628	<u>L4</u>	
<u>L3</u>	L2 near8 (acrylate\$1 or methacrylate\$1 or trimethacrylate or triacrylate\$1)	14387	<u>L3</u>	530
<u>L2</u>	(methoxypolyethylene\$1 or methoxydiethylene\$1 or trimethylolpropane\$2 or ((methoxy or trimethylol) near4 (polyethylene or (poly near2 ethylene) or diethylene or polyethyleneglycol or ethyleneglycol or diethyleneglycol or propane)))	42451	<u>L2</u>	529

*DB=USPT,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR*

<u>L1</u>	us-6066378-\$.did.	2	<u>L1</u>	
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END OF SEARCH HISTORY